

Mother tongue as the medium of instruction at developing country universities in a global context

AUTHOR:
Aceme Nyika¹

AFFILIATION:
¹Research Office, Faculty of Health Sciences, University of the Witwatersrand Medical School, Johannesburg, South Africa

CORRESPONDENCE TO:
Aceme Nyika

EMAIL:
Aceme.Nyika@wits.ac.za

POSTAL ADDRESS:
Research Office, Faculty of Health Sciences, Phillip V. Tobias Health Sciences Building, University of the Witwatersrand Medical School, 7 York Road, Parktown 2193, South Africa

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One of the factors attributed to poor performance of some indigenous students at universities in developing countries is the use of a second language – mainly English and to some extent French – as the language of instruction at the universities. Consequently, policymakers in some developing countries have introduced, or are debating the idea of introducing, local vernacular languages as the official languages of instruction at their respective universities. Indeed, learning the official language of instruction as a second language is an additional hurdle, which to some extent hinders some students from performing well in their university studies. Thus students whose mother tongue is used as the language of instruction at their universities have an advantage over students whose mother tongue is not the language of instruction at their universities. Policies regarding the medium of instruction at universities have a range of short-term and long-term implications, some of which may be easily overlooked yet they may have far reaching repercussions for current and future generations. In this paper, a repertoire of pertinent issues surrounding the use of vernacular languages at universities is explored. These issues include performance of students, quality of graduates produced in terms of employability, university overall productivity, innovation, university competitiveness in the wake of globalisation, preservation of the vernacular languages and contribution towards national as well as global socio-economic development.

Introduction

Many developing countries are grappling with the issue of policy on language of instruction to be used in schools and tertiary colleges. Although English is arguably the most widely used language to the extent that it could be considered to be an international language,^{1,2} various developing countries have been debating policy changes regarding the use of vernacular languages or *lingua franca* as the medium of instruction in their educational systems.²⁻⁴ In Africa, the main language of instruction used in most educational systems is English^{1,2,4} followed by French. In general, the former colonial language is the one used as the official language of instruction in the educational systems of African countries. It is a widely accepted fact that language was, and may still be, a barrier to access to education of high quality in some developing countries. Proficiency in the language of instruction can affect comprehension of content and hence the performance of students in various subjects such as Mathematics⁵⁻⁷ and Science. Hence the success of students whose mother tongue is not English or French may be compromised when they embark on university education at universities at which English or French is the language of instruction. Consequently, some universities in developing countries are at different stages of introducing local vernacular languages as official languages of instruction in an effort to address the challenge. Indeed, the importance of the mother tongue has been pointed out even in some developed countries⁸; but developed countries are already economically strong and are generally already more competitive than developing countries in the global village.

However, the language policy of university educational systems should not be considered and developed in isolation from other pertinent factors which affect the overall capability of universities to produce competitive graduates of high quality who can effectively contribute towards national and global socio-economic development of marginalised populations. Thus a holistic approach which takes into account the whole repertoire of relevant issues that affect the entire educational system from kindergarten through primary and secondary schools to universities should be considered. The acquisition of proficiency in any language is a learning process that has to be started as early as possible in the development of students. For instance, it has been reported that starting to learn English as early as primary school helps proficiency in the language.⁹ In addition to the issue of early learning, studies have also shown that there is interdependence in the educational development of bilingual proficiency.^{10,11}

Although empirical research has shown that the use of mother tongue or *lingua franca* in early literacy and content learning stages is more effective than use of a foreign second language,¹²⁻¹⁴ there is a paucity of empirical evidence which shows that the use of a vernacular language at higher levels of learning could lead to educational success and subsequently success in career development in the real world. Although some studies on the effect on performance of the use of a vernacular language as the medium of instruction have been done in Tanzania and South Africa,¹⁵ there is a dearth of empirical data on the long-term impact of using vernacular language until secondary or tertiary levels in terms of the capability of the graduates produced to effectively contribute towards national and global socio-economic development. Thus use of vernacular language as a medium of instruction to the exclusion of an international language such as English could eventually and inadvertently be to the disadvantage of the very people who were meant to benefit from such a policy. In fact, anecdotal evidence shows that graduates from countries that use a local vernacular language as the medium of instruction until tertiary levels eventually face challenges adapting to real-life environments in which English is the official language of communication.

An example of such a country is Tanzania, where Swahili has been used as the official language of instruction and communication for the whole nation. A political decision was made to make Swahili the official national language out of all the vernacular languages and so some tribes in Tanzania have to learn Swahili as their 'second language'. Although Swahili is used to different extents in some countries in the East African region, it cannot be considered to be a widely used international language. Like many other developing countries, Tanzania has to attract and deal

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with much needed foreign investment, mainly from developed countries in which English is the language used. Consequently, foreign-owned industrial, mining and tourism businesses depend to a large extent on workers drawn from other countries in the East African region and beyond who are more proficient in English. Whereas the Tanzanian model of language policy is based on one 'local' language being officially made a national language, the model being considered by other developing countries is based on making several specific vernacular languages the languages of instruction in particular localities of the country in which the vernacular languages are predominantly used as the mother tongue. The different models each have pros and cons. Hence the need to objectively consider all pertinent issues in the context of a long-term vision for the individual students, future generations, the universities themselves and the future of the countries concerned. It is critical to ensure that policies – such as those regarding the use of vernacular languages as the medium of instruction at universities – which are meant to enhance academic success of indigenous students do not inadvertently cause or worsen any intellectual and economic marginalisation of indigenous students by restricting their capability to effectively utilise their acquired education and skills to localities in which their vernacular languages are used.

For most African countries, the use of English or French as the language of instruction in educational systems was not by design but was an imposition during the colonial era. Thus language was perceived as a tool for oppression against the disadvantaged indigenous populations. Within that background, policymakers in some formerly colonised developing countries feel obliged to change their national policies so as to make local vernacular languages the official languages of instruction in schools and universities; such a change of policy could be considered to be a demonstration of political independence. However, it is critical to be pragmatic and objectively weigh the potential advantages and disadvantages of any policy change. Whereas some policy changes may be politically plausible, they may not necessarily be advantageous from other points of view. It is critical for policymakers to consider short-term and long-term socio-economic implications as well as the practicability of implementing national policies.

National policies should create micro- and macro-environments that are conducive to better living conditions for citizens through empowerment rather than dependency on some form of aid. A combination of various complementary factors helps to create conducive conditions. Enabling citizens to access good quality education is one of the most effective ways of empowering them, because they can become employed or self-employed. It is in light of the above points that the issue of language of instruction should be considered carefully. This review explores the whole repertoire of pertinent issues that should be considered before making a decision pertaining to use of local vernacular languages in universities. The potential implications of using vernacular languages as official languages of instruction at universities are discussed in terms of (1) the performance of university students, (2) innovation, (3) employability of graduates produced by universities, (4) ability of universities to compete nationally and globally, (5) ability of universities to contribute towards national and global socio-economic development, (6) chances of previously disadvantaged groups to participate in and benefit from the mainstream economy, (7) choice of a vernacular language, (8) use of local vernacular languages at universities as a 'postponement' of rather than a solution to challenges associated with indigenous students learning an international language and (9) efforts to preserve local vernacular languages.

Unpacking pertinent issues

Performance of students

Performance of students is affected by several factors. The level of comprehension of the language of instruction can negatively affect performance because students may experience difficulties in grasping the underlying basic concepts that are taught in various subjects. This difficulty could cause some students to resort to memorising and 'regurgitating' information, which leads to limited success when answering examination questions that require analytical approaches based on comprehension of the basic concepts involved. Performance

can also be affected by the quality of teachers in terms of their command of the language of instruction as well as their comprehension of the basic concepts of the subjects they teach. It is critical for teachers and students to interact effectively so that students can express their questions well and teachers can explain explicitly with relevant examples or demonstrations if applicable. Hence subject content teachers may also have to identify and address second language 'barriers' which may be preventing some students from understanding fundamental academic concepts.^{16,17} However, if teachers are not fully knowledgeable about the subjects they teach then students will not derive maximum benefits from the student–teacher interactions in class, even if there are no language 'barriers'.

Teachers should therefore have a good command of the language of instruction, be it international or vernacular, plus adequate knowledge of the content of the subject. The language of instruction has no intrinsic value per se – it is merely a medium of communication used to convey subject content. Thus having a teacher who is very proficient in the language of instruction but lacks adequate knowledge of the subject content compromises the performance of students. In order to effectively use vernacular languages for instruction at universities, it would be critical to have teachers who have both a good command of the particular vernacular language (either as their mother tongue or as a learned second language) as well as adequate knowledge of their subjects of specialisation. In addition, enhancement of a student's performance may require implementation of various complementary strategies, such as schema-based word-problem solving instructions^{18,19} and peer-assisted inclusive instructions,^{20,21} whenever applicable. Thus proficiency in the language of instruction and content knowledge should be complemented with other supportive and appropriate strategies.

The performance of students can also be affected by availability of relevant resources. For instance, availability of textbooks and various reading materials is critical for students to perform well in their subjects, as the students can complement what is taught in class and enhance their comprehension through reading on their own. In addition to textbooks and other reading materials, well-equipped laboratories are critical for students to do well in science subjects. Thus if a specific vernacular language is made the official language of instruction at a particular university, then, ideally, reading materials (textbooks, journals, Internet materials, etc.) written in that vernacular language should be made available. Who would be responsible for such a mammoth task – the university concerned or the national government? The 'learning environment' is also important; a secure environment characterised by a general seriousness of purpose and free of abuse, diseases, delinquency and discrimination enables students to perform to their best abilities. A conducive environment at the place of learning should be complemented with an environment at home characterised by discipline, encouragement and love.

Innovation

Innovation is not restricted by language. One does not have to be proficient in any particular language in order to be able to invent something. Thus an invention can potentially be developed to a stage of application regardless of what language the inventor is proficient in, provided the resources for the development are available without a need to apply for funding which may necessitate use of a particular language preferred by potential funders. If necessary resources are not available, innovative ideas may remain as such with limited chances for development into useful commercialisable products or useful policies.

In other words, language may become a barrier if there is a need to elaborate on an innovation to a stakeholder not proficient in the inventor's mother language. Although language of instruction at universities does not hinder innovation per se, comprehension of basic concepts and existing basic knowledge may form a critical basis for innovation. Thus one may need to have read and understood existing concepts and knowledge to be able to invent something completely new or improve on something already in use. If the reading materials covering the relevant concepts and basic knowledge are written in a language which one does not understand, then one's ability to come up with innovative ideas may

be compromised. For instance, the reading materials may be in English (which is currently the case for most subjects) and not in the language in which an aspiring inventor is proficient.

Employability

Most developing countries are experiencing increasing levels of unemployment. This trend is a result of many factors, which arguably include competition caused by globalisation as well as technological advancements that enable mechanisation of industrial processes, leading to fewer workers being needed even if developing countries are gradually being industrialised. It is therefore critical that graduates who are produced by universities in developing countries are competitive enough to get employment or to create their own employment as entrepreneurs. In addition, the educational systems producing graduates should be demand-driven and responsive to the dynamic needs of the national and global job markets. Some empirical evidence has shown that, controlling for other confounding factors, proficiency in English is significantly associated with increased wage earnings.²² Thus the question of whether or not graduates will eventually be highly employable anywhere in a particular country, or anywhere in the world, if they obtained their degrees through universities which use particular vernacular languages for instruction purposes should be considered when making such policies. Would the graduates be employable only in the areas in which their respective vernacular languages are used? Would investors from other parts of the country or the world be attracted to such areas or would they prefer areas in which an international language is used? Retrospectively, would graduates themselves appreciate a policy on the use of vernacular languages as the medium of instruction at universities when they are out in the real world fending for themselves and for their families?

University competitiveness in the wake of globalisation

Universities are making concerted efforts to attract high calibre students and workforce in order to be competitive nationally and globally. With the best students and workforce, universities can in turn enhance their ability to generate their own funds for research, in addition to attracting research funds from funding organisations. Factors that strengthen university competitiveness include production of high quality and quantities of graduates, high-quality demand-driven research outputs, participation in national and international collaborative programmes, innovative research which results in useful products or policies and publication of research outputs. Generally, these factors to a large extent require use of an international language. For instance, most applications for research grants should be completed in English, which means that graduates who performed well in universities using vernacular local languages may find it difficult to get competitive grants which require applicants to use English. The majority of national governments which offer research grants require applicants to use English (or French in Francophone countries), otherwise the governments would have to offer separate grants to be administered in different local vernacular languages. Widely read academic publications are in international languages. Journals in various vernacular languages may have to be established to enable publications in various local languages. However, the readership would be restricted to specific groups of people who can read and understand the particular local vernacular languages, which would negate the whole purpose of publishing which is mainly to enable widespread dissemination of research outputs.

Contribution towards national or global socio-economic development

Universities in developing countries have a role to play in promoting socio-economic development of people. Through conduction of relevant research, universities should address the needs of their countries primarily and global needs secondarily. The research should also be used as a platform on which students are trained in order to produce graduates with relevant hands-on skills which meet the needs of employers and also form a strong foundation for self-employment. National socio-economic development requires universities which produce nationally and internationally relevant graduates rather than 'provincially'

relevant graduates. In addition, universities should contribute towards the creation of micro- and macro-environments which attract investment from across different provinces, countries and continents. Therefore, it could be argued that use of vernacular languages limits the extent to which universities can effectively contribute towards national and global socio-economic development. In addition, the graduates produced by such universities are likely to be derived mainly from previously disadvantaged groups of people, which implies that the groups would be systematically and effectively isolated from the competitive mainstream activities taking place nationally and globally.

Unless the respective governments can create adequate numbers of jobs locally using local resources without need for foreign investment, local people would have limited access to opportunities beyond the areas in which their vernacular languages are used. Their areas may not attract investment from other parts of the country or other parts of the world as much as areas in which an international language is used. To enable research then, the governments would have to provide adequate funding for which applications could be completed in the vernacular languages; otherwise the researchers educated in the vernacular languages would not be competitive enough to get research grants provided by other players who would require applications to be in an international language. The majority of funders are based in developed countries in which English is the main language.

Challenges of choosing one vernacular language out of many

In situations in which there is one vernacular language to consider, the choice of the vernacular language for the medium of instruction at a relevant university or universities would be straightforward. However, in reality, there usually is multiple vernacular languages spoken in particular localities or countries in which a university or universities may be located. In such situations, the issue of criteria to be used to determine which of the many vernacular languages to select as the medium of instruction at the particular local universities becomes a challenge. Would it be based on the 'majority rule', leading to the vernacular language of the majority of people being chosen as the language of instruction? What would happen to the vernacular languages of the 'minorities'?

Risk of ethnic or racial discrimination and 'isolationism'

Use of local vernacular languages as the medium of instruction at specific universities located in particular geographical or political regions of a country or continent could inadvertently increase the risk of discrimination along ethnic or racial lines because vernacular languages are generally specific to particular ethnic or racial groups. Thus the risk of ethnic or racial groups considering certain universities at which their local vernacular languages are used as being exclusively 'their universities' – which primarily should enroll their local children – becomes high if educational policy is amended to introduce vernacular languages as the medium of instruction at universities.

A policy-based system of enrolling university students that leads to the majority of enrolled students being those who speak a particular vernacular language (and hence are from a particular ethnic or racial group) could lead to 'islands' of universities which cater for specific ethnic or racial groups. Such a system could lead to a situation of 'isolationism', which would inadvertently divide nations and continents along ethnic or racial lines. In contrast, use of an international language as a medium of instruction would promote mixing of people from different ethnic or racial groups that would still have their unique cultures and vernacular languages which do not necessarily have to be preserved through use of vernacular languages as medium of instruction at universities. Although English is a former colonial language, its continued widespread use as an international language in the post-colonial era arguably makes it a relatively 'neutral' language which could minimise the potential risk of ethnic or racial discrimination and 'isolationism' that could be caused by localised use of vernacular languages as the medium of instruction at local universities. It should be emphasised that this does not imply that an international language like English is superior to other languages; it is merely a convenient tool or medium to use as it is already widely

used globally. Countries could use English as a tool to their advantage in terms of socio-economic development and upliftment of the quality of life of poverty-stricken populations by maximising economic benefits that could be gained by being competitive self-sustainable players in the global market.

Postponement of challenges associated with second language usage

Use of local vernacular languages as the medium of instruction at university level, to the exclusion of an international language, could in practical terms be only a postponement of the challenges associated with limited proficiency in an international (second) language to the post-university period in the lives of the students concerned. After university, graduates may have no other option but to fit into real-world environments in which an international language is the official language of communication. Thus, although they may have sailed through university educational systems that use their local vernacular languages as the medium of instruction, their career development endeavours may be compromised by their limited proficiency in the international language used in the real world. Even if the graduates were to become self-employed entrepreneurs, their business endeavours may be hampered by the limited proficiency in the international language. For instance, business tenders are generally in English. Business proposals are generally in English. Business clientele may not be restricted to people who speak and understand particular vernacular languages.

Preservation of local vernacular languages

There are many ways of preserving and promoting vernacular languages and there is no single method which could be regarded as the 'magic bullet'. Each method has its own potential advantages and disadvantages, hence the need for a thorough risk-benefit analysis when making policy changes pertaining to the use of vernacular languages as the medium of instruction at universities. Universities have various departments – such as linguistics, arts, theatre and drama – which carry out various activities aimed at enriching and preserving languages and cultures. In recognition of the importance of languages and culture, governments have ministries which focus on promoting and preserving the languages and cultures of their respective countries. In addition, the arts, theatre and media industries are a basis of huge business which not only create wealth and jobs, but also help to preserve and promote different languages and cultures.

In many homes and communities, parents, grandparents, ordinary members of communities, and community leaders could play a role in keeping their cultures and languages alive. For instance, parents could ensure that their children do not neglect and abandon their vernacular language by using the language in their homes instead of using an international language such as English or French at home. However, people are free to use their language of choice in their homes, and parents may consider an international language to be so important that they would rather help their children to master it by using it at home. In addition, some youths may prefer using and developing their own pidgin language to their mother language,²³ regardless of the language of instruction used in the educational systems of their country.

Recommendations and concluding remarks

As policymakers in developing countries consider changing policies in order to make some vernacular languages official languages of instruction at universities, it is critical to take into account a range of pertinent factors and possible long-term implications. A bilingual system that starts with the mother tongue as the main medium of instruction while an international second language is gradually introduced using the mother tongue is recommended. By the time students get to mid-primary school level, they should have mastered the second language to levels that facilitate a transition from the vernacular to the international language as the language of instruction. Thus an international language would be used as a medium of instruction from mid-primary school to university level. Relevant local vernacular languages could be used for instruction purposes from crèche to mid-primary school as a preparatory

phase for the introduction of an international language as the medium of instruction all the way to university level. However, if a decision is made to use local vernacular languages as official languages of instruction up to university level, it is recommended that policymakers consider having bilingual systems which include an international language.

Policy changes that will introduce vernacular languages as the medium of instruction at university levels may not lead to the desired results. Such policy changes may inadvertently be to the disadvantage of the very indigenous students for whom they are intended to benefit. There is a risk of being short-sighted and to focus only on university pass rates of 'indigenous' students without considering the possible long-term negative impact on (1) the eventual competitiveness of students in terms of securing employment in the national and international markets after obtaining their university degrees, (2) the productivity of the universities in terms of attracting high-quality students, workforce and research funding, (3) the ability of the universities to significantly contribute towards national and international socio-economic development through production of graduates who can effectively participate in the mainstream economic activities without being restricted to vernacular language-specific localities and (4) national and international cohesion without the risk of ethnic and racial segregation being inadvertently promoted. Because of the heterogeneity of populations and the multiplicity of vernacular languages within and across countries, collaboration between or among developing countries would also be negatively affected if the countries did not use a common international language. For instance, a university in a country in East Africa would have challenges engaging in collaborative research or exchange educational programmes with another university in a country in southern Africa if the universities did not use at least one common language.

Poor performance of university students whose mother tongue is not the language of instruction may not be attributed solely to limited proficiency in the language of instruction because there are other confounding factors such as overall quality of primary and secondary schools attended, quality of teachers, socio-economic status of their families and the type of environment in which the students live and study. In order to enable an evidence-based formulation of policies pertaining to language of instruction in educational systems in developing countries, more empirical research should be conducted, which covers the various pertinent factors – including the views and preferences of stakeholders such as the students themselves, their parents, academics, tertiary education policymakers, politicians, funding organisations, industry and local communities in the vicinity of the universities.

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